



Castilleja

The Newsletter
of the Wyoming
Native Plant Society

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Rare Plants of Teton and Darby Canyons

By Stuart Markow

Most people traveling to the Tetons make Grand Teton National Park and the various watering holes and tourist attractions of Jackson their vacation destination. Indeed, the east slope of the Teton Range and surrounding Jackson Hole area has much to offer, both for the casual tourist and vacationers serious about observing the abundant plants and animals indigenous to the area. Less well-known, however, and therefore less crowded, is the west slope of the Tetons, accessible via Idaho State Highway 33, northwest of Jackson.

In contrast to the high, precipitous eastern face, the west side of the Tetons slopes gently toward Teton Basin, dissected by deep, glacially-carved drainages. Two of these drainages are particularly interesting botanically, Teton Canyon and Darby Canyon, located just east of Driggs, Idaho, are adjacent stream channels which empty into the Teton River. Both canyons are within Targhee National Forest and comprise part of the Jedediah Smith Wilderness.

These canyons have, in recent years, been recognized as sites harboring many plant species that are currently or have previously been listed as taxa of special concern. Collections by Loran Anderson, Robert Dorn, Erwin Evert, and others have documented the occurrence of nearly two dozen species currently tracked by the US Forest Service or the Nature Conservancy's Wyoming Natural Diversity Database (WYNDD). Eleven of these have status of S1 or SH (highest priority) under the Conservancy's Natural Heritage Ranking system. Several other species which have recently been down-listed are also present, providing further evidence for unusual habitat conditions.

A major factor contributing to the unique flora of the area is the underlying geology. While the eastern flank of the Teton Range is composed mainly of exposed granite, gneiss, schist, and pegmatites formed up to three and a half billion years ago, the west slope is blanketed with two to three hundred million year old sedimentary layers deposited when western Wyoming was still an

inland sea. Particularly significant are limestone formations up to one thousand feet thick and manifested in sheer cliffs and some rather remarkable caves.

Another factor influencing the vegetation is the climate, and in particular, the local precipitation patterns. While the surrounding lowlands normally receive less than twenty inches of precipitation annually, the west slope of the Tetons can get over forty inches per year. This occurs because the Tetons are the first mountains to intercept storm systems moving east across the Snake River Plain. Indeed, the highest peaks and ridges

may have up to sixty inches of precipitation dumped on them, receiving perhaps the highest annual precipitation in Wyoming. The abundant water along with the highly calcareous limestone substrate undoubtedly helps to create a hospitable growing environment.

The topography clearly channels cold air from the higher elevations, evidenced by the presence of species generally restricted to alpine or subalpine habitats. These include James' saxifrage (*Boykinia heucheriformis*), mountain sorrel (*Oxyria digyna*), and (continued on page 6)



Above: Mountain holly-fern (*Polystichum lonchitis*), one of the many ferns occurring in the Darby and Teton Canyon area. Ill. by W. Fertig.

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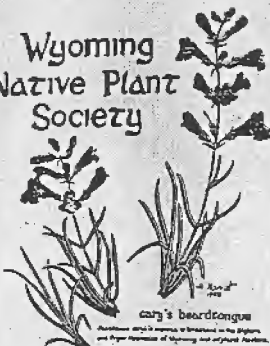
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Attention WNPS Members: Your articles about Wyoming native plants or art work are welcome in the newsletter! We are especially looking for articles on native plant lore, cultivation of natives, and interesting places to visit. Information on local activities of interest to members is also appreciated. Deadline for the February issue is 5 February 1996.

Wyoming Native Plant Society



WNPS NEWS

Scholarship: The annual WNPS student research scholarship is available to any junior college, undergraduate, or graduate student studying the native flora of Wyoming. Applications are now being accepted for the 1996 scholarship. One to two scholarships in the amount of \$200-\$400 will be awarded this year. Projects may deal with taxonomy, floristics, ecology, range science, physiology, mycology, or any other botanical discipline. Applications (including a brief description of the project) are due to the secretary by 20 February 1996. Winners will be chosen by the Board in March, 1996.

Elections: It's never too early to start thinking of candidates to serve on the WNPS Board. If you are interested in serving, or can recommend a candidate, please contact the secretary by 1 March 1996.

Member's Request: Steven Habbel, a new member of the Society, is interested in corresponding with members who share an interest in Penstemons and in setting up a seed exchange. If you can help, please contact Steven at 4912 Woodland #6, Royal Oak, MI 48073.

Attention Laramie/Cheyenne Members: For some time there has been interest in establishing a chapter of the Society in southeast Wyoming. If anyone is interested in taking the lead on organizing a chapter here (or anywhere else in the state for that matter), please contact the secretary.

New Members: Please welcome the following new members of WNPS: Debbie Donahue (Jelm), Steven Habbel (Royal Oak, MI), Susan Miller (Cody), Ellen Panasencko (Story), Helen Robinson (Sinclair), Mark Anthony Ryan (Laramie), and Dan and Sally Tinker (Laramie).

We're looking for new members: Do you know someone who would be interested in joining WNPS? Send their name or encourage them to contact the Society for a complimentary newsletter.

Treasurer's Report: Balance as of 10

December, 1995: General Fund \$ 622.00; 1995-96 Scholarship Fund \$ 371.00; Total Funds: \$ 993.00. WF

BEATING AROUND THE BUSH

(a short one-act play)

By John "Bard of Burns" Baxter

(Scene 1: Lake Park, Milwaukee, Wisconsin. Students Dan Dutton and his girlfriend, Sue Sutton, are reviewing for the upcoming Dendrology lab exam).

Dan: Sue, I'm getting tired of reviewing. Let's fool around a little. Euonymus my hair?

Sue: Not now - I have a headache. Besides, the last time we fooled around, yew got a hemlock on me and ripped my skirt.

Dan: Oh well, back to work. We have to learn alder trees and shrubs. But later I'd like to go down to the beech if it's oak with you. I'll Carya books.

Sue: Oh these darn textbooks! I'd like to set fir to them.

Dan: But Sue, Viburnum when you can sell 'em next semester?

Sue: Look - there's a Siberian pea tree.

Dan: Right. I guess you know that the Siberian mycologists are so hard up for lab glassware they have to use the wood of the pea tree to-

Sue: Yes, I know - to make Petri dishes. That's worse than one of Dr. Baxter's jokes. Oh look, what is that tree over there behind those bushes? Dr. Baxter couldn't get through there to identify it.

Dan: Well I can. I Amelanchier guy than he is, and I can go anywhere a catkin.

Sue: Well, I don't know about that, but I know you'll do anything a dogwood.

(Scene 2: Dendrology lab, right after the exam).

Students (in unison): Dr. Baxter, Eucalyptus with that test!

Editorial

A BLM State Sensitive Plant List is Needed Now More Than Ever

The Bureau of Land Management (BLM) manages nearly 1/3 of the lands in the state of Wyoming, including the habitat for over 150 species of state and globally rare plants. Nearly 40 current or former US Fish and Wildlife Service (USFWS) Category 1 or 2 candidate species are found on BLM lands in Wyoming, including several that are found nowhere else in the world. As a federal agency, the BLM is required to manage for federally listed Threatened and Endangered plants on its lands. In recent years, the agency has also developed an internal policy to provide management attention for USFWS candidates (species being considered for potential listing under the Endangered Species Act). The intent of this policy is to prevent these species from becoming even rarer (due to the BLM's own actions), and thus more likely to be listed as Threatened or Endangered by USFWS.

These regulations, outlined in the official BLM Manual, also give each state director the responsibility to develop an official state-wide list of Sensitive species on BLM lands. Similar Sensitive species lists are maintained by the Rocky Mountain and Intermountain Regions of the US Forest Service.

The need for a BLM Sensitive list in Wyoming has been growing in recent years, as demands on BLM lands for energy, mineral, timber, grazing, and recreation has increased. Recent changes in USFWS policy has also greatly increased the need. In July, 1995, USFWS made the decision to drop the Category 2 designation for plants and animals (see the October, 1995 issue of *Castilleja*). While many of these C2 species have been found to be more abundant or less threatened than once thought (and thus not warranting listing under the Endangered Species Act), there are still 25-30 globally rare plants in Wyoming in potential jeopardy. Without formal designation as USFWS candidates or BLM Sensitive species, these plants risk being ignored until it is too late or too expensive to save them.

While greater threats loom on the horizon, many of our rarest plants on BLM lands can be afforded adequate protection through proactive policy directives. In many cases, the development of Habitat Management Plans and the protection of selected areas of good habitat by the BLM could obviate the need to list these species as Threatened or Endangered. Such actions would reduce the importance of "inadequacy of existing regulatory mechanisms" and "threatened destruction, modification, or curtailment of habitat", two factors considered by USFWS when determining if a species warrants federal listing.

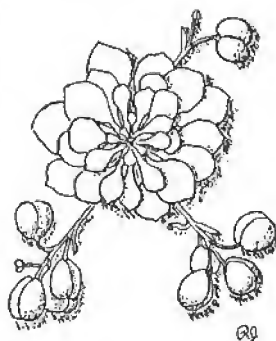
Development of a Sensitive plant policy would also allow BLM field personnel to develop more flexible, habitat-oriented management policies than they might be allowed if a species is listed by USFWS. Such plans could allow other resource uses to continue as long as they were compatible with the management needs of the plants. Once a network of adequate management areas was in place,

unoccupied or marginal habitats would be available for other resource uses without creating conflicts for the survival of the Sensitive plants.

The BLM Wyoming state office has been considering creating a state Sensitive plant and animal list for several years, but has been reluctant to establish one due to fear of public and industry opposition. Clearly, the time has arrived for a Sensitive list and policy to be finalized. Without support from plant enthusiasts, however, the chances of this occurring are greatly diminished. WNPS members concerned about rare plants on BLM lands are encouraged to contact Alan Pierson, Wyoming State Director, and Jeff Carroll, BLM State Botanist (BLM Wyoming State Office, PO Box 1828, 5353 Yellowstone Rd., Cheyenne, WY 82009). WF

The following plants, many of which are former USFWS candidates, have been recommended by the Wyoming Natural Diversity Database (Nature Conservancy) for BLM Sensitive status: *Antennaria arcuata* (meadow pussytoes), *Arabis pusilla* (small rockcress), *Artemisia bienis* var. *diffusa* (Mystery wormwood), *Astragalus drabelliformis* (Big Piney milkvetch), *A. gilviflorus* var. *purpureus* (Dubois milkvetch), *A. jejunos* var. *articulatus* (Hyattville milkvetch), *A. proimanthus* (precocious milkvetch), *Cirsium aridum* (Cedar Rim thistle), *C. ownbeyi* (Ownbey's thistle), *Cleome multicaulis* (many-stemmed spider-flower), *Gryptantha subcapitata* (Owl Creek miner's candle), *Descurainia torulosa* (Wyoming tansymustard), *Lesquerella fremontii* (Fremont bladderpod), *L. macrocarpa* (large-fruited bladderpod), *Penstemon acaulis* (stemless beardtongue), *P. gibbensii* (Gibben's beardtongue), *Phlox opalensis* (Opal phlox), *P. pungens* (Beaver Rim phlox), *Physaria dornii* (Dorn's twinpod), *P. eburniflora* (Devil's Gate twinpod), *P. saximontana* (Rocky Mountain twinpod), *Rorippa calycina* (persistent sepal yellowcress), *Shoshonea pulvinata* (shoshonea), *Sphaeromeria simplex* (Laramie false sagebrush), *Thelesperma caespitosum* (Green River green thread), *T. pubescens* (Uinta green thread), *Townsendia microcephala* (Cedar Mountain Easter daisy), *Trifolium barnebyi* (Barneby's clover), and *Yermo xanthocephalus* (desert yellowhead).

[Editorials in *Castilleja* reflect the views of the author and are not necessarily those of the WNPS Board. Contrasting viewpoints, or opinions on other issues are welcome].



Left: Devil's Gate twinpod (*Physaria eburniflora*) is a state endemic that is restricted to the Sweetwater and Platte River basins of central Wyoming where it is found in cushion plant communities on a variety of rock types. Ill. by Robin Jones (Wyoming Rare Plant Field Guide).



Violets are Blue, Aren't They?

By Walter Fertig

In the botanical world, plant names are often synonymous with colors. We all know that roses are red, fuchsias are pink, mustards are yellow, limes are green, pinks are pink, oranges are orange, and of course violets are violet. Or are they?

In the Rocky Mountains, nearly one-half of our native violet species (*Viola*) are white or yellow! This is not the only unusual feature of these remarkable plants. In their methods of attracting pollinators, reproduction, and seed dispersal, the "shrinking violet" is one of the most interesting plants around.

Worldwide, there are nearly 400 species of violets. Most of these are low-growing herbs with simple, heart or kidney-shaped leaves (although some species have palmately divided leaves) and irregular, 5-petaled flowers. Other members of the violet family (*Violaceae*) differ markedly in having regular, radially symmetrical flowers or a shrubby growth form. Tropical members of the family can even attain tree proportions.

In the early spring and summer, north temperate species of violet produce large, showy flowers to attract a variety of insect pollinators, including bumblebees, wasps, sawflies, hawkmoths, and butterflies. These insects are attracted by a suite of olfactory and visual cues. Glands on the lateral petals (comprising the "beard") produce fragrant odors that attract insects to the flower. Dark colored veins which contrast sharply with the background color of the petals serve as "nectar guides", directing the pollinator to the mouth of the flower just as bright lights direct an airline pilot to a runway. The insect's reward is nectar produced in the pouch-like spur at the base of the lowermost petal. In reaching the nectar, an insect may jar the spurs of the anthers, showering its body with pollen. On subsequent trips to other flowers, the pollen-laden insect is likely to brush against the stigma, thereby pollinating the flower.

Violets have a few other tricks to promote insect pollination. Individual violet flowers are unusually long-lasting, often remaining in bloom for 1-2 weeks. During this time the position of the

flower may change from erect, to horizontal, to nodding in order to accommodate different pollinators. The petals, too, may move to provide different insects with a variety of shapes for landing surfaces.

Insect pollination, however, can still be a risky proposition, especially in cold, wet summers when insects may be less abundant. To ensure production of at least some viable seeds each year, violets produce a second type of flower in the summer. These cryptic, green flowers lack petals, beards, nectar guides, and other insect-attracting devices. Such flowers never open and are completely self-pollinated. Seeds produced from these closed blooms (called cleistogamous flowers, in contrast to open, showy chasmogamous flowers) will grow into plants that are genetically identical to their parent and pre-adapted to the same environment.



Above: Early blue violet (*Viola adunca*), the common blue-flowered violet species of the mountains of Wyoming. Ill. by Wilma Monserud (Sida 2:9).

Violet fruits are 3-parted capsules that explode violently when ripe to hurl seeds up to 16 feet from the parent plant. Some violet seeds are further dispersed by ants attracted to oil-rich bodies on the seed coat. Ants will often take these seeds into their underground tunnels, eat the oily parts, and then discard the rest. In doing so, the ant is actually planting the seed!

Violets may be found in a wide variety of habitats in the west, ranging from desert foothills to alpine meadows. Most species are adapted to relatively moist areas and are best searched for along streambanks or in mesic woods. The yellow sagebrush violets (*V. nuttallii*, *V. praemorsa*, and *V. vallicola*) are unusual in that they are often found in relatively dry habitats, including sagebrush grasslands, plains, and slopes.

Several rare violet species occur in Wyoming. Some, like the prairie violet (*V. pedatifida*) and downy yellow violet (*V. pubescens*), are common eastern species that only venture into Wyoming in the Black Hills. Others, like the western rough-leaved violet (*V. orbiculata*) are species more typical of the Pacific Northwest and are at the edge of their range in the mountains of northwestern Wyoming.

Violets and pansies are popular garden plants. Other economic uses include perfumes, liquors, and flavoring oils derived from the blooms of *V. odorata*. Perhaps their greatest value, however, is simply the beauty they bring to the outdoors.

Stop the Russian-Olive Invasion!

(Reprinted from the Nov/Dec Sego Lily, the newsletter of the Utah Native Plant Society)

Throughout the West, an intruder invades our grasslands and riparian areas along rivers, streams, and ditches, forever changing the plants and animals found there. The intruder? The Russian-olive (*Elaeagnus angustifolia*). This seemingly innocent tree is actually an aggressive Eurasian invader engaging in a subtle takeover!

Wildlife biologists are just beginning to understand that Russian-olives are of little or no use to many wildlife species. This is surprising to people who see common species such as starlings, cedar waxwings, and robins using the trees. But these birds are very adaptable and can find food and shelter in a variety of trees.

Unfortunately, biologists estimate that one-third of the bird species using native riparian areas, including a number of rarer species, do not use areas dominated by Russian-olive. Native trees like cottonwoods and willows serve as food and nest sites to these birds, but the invading Russian-olive does not. Its small limbs and hard wood are not appealing to cavity-nesting birds like the chickadee. Furthermore, Russian-olive does not support many insects so warblers and other insect-eating birds cannot rely on it as a food source.

Russian-olive seeds grow slowly in the shade of native cottonwood and willow trees and may appear somewhat dwarfed. However, when the cottonwoods and willows die, Russian-olives grow rapidly, taking advantage of available sunlight. Cottonwoods and willows need full sunlight to reestablish themselves and cannot grow in the shade of the invading Russian-olives. The result is a permanent conversion of native riparian areas to areas dominated by Russian-olive. This spells disaster for many native plants and animals.

Farms and ranches are impacted by Russian-olive as it invades pasture land and blocks irrigation ditches. The invasion can be a hindrance to daily operations, and removal of the trees is costly and difficult.

Russian-olive's ability to thrive in a wide range of soil types and moisture conditions made it a popular choice for landscaping in the West. Following the Great Dust Bowl it was promoted for windbreaks and soil conservation, evident today where rows of Russian-olive mark abandoned homesteads. Since the 1950s, it has been recommended for landscaping and mistakenly, for wildlife habitat. Continued promotion by many state and federal agencies and commercial nurseries, coupled with its aggressive nature, results in establishment of not only intended plantings but a number of "escapees" as well. Escapees occur primarily with the help of birds. The hard-

coated seeds pass unharmed through the digestive tract of birds and may be carried a mile or more from the original tree. They are often deposited along rivers, streams, and ditches, ultimately spoiling important habitat for many native animals.

Stopping the Russian-olive invasion is costly and difficult. The costs increase with delayed action, and on public lands, taxpayers foot the bill. Attempts to control Russian-olive include cutting, girdling, burning, herbicide application, mowing, and mechanical removal. The most cost-effective and environmentally responsible method of control is to prevent seed dispersal by removing trees and eliminating seed sources. But this isn't easy unless people are aware of the threat and act accordingly.

Russian-olive is a problem, in part because it hasn't been broadly identified as a serious environmental threat. Awareness is an important first step:

- Educate your friends, family, and colleagues. Encourage them to pass on information about Russian-olive.
- Landscape responsibly. Learn about alternative trees for landscape use in your area.
- Ask your local nursery to stop selling Russian-olive and to stock plants that are native to your region.
- Write to local, state, and federal government agencies and request formal designation of Russian-olive as a noxious weed.
- Remove existing Russian-olives from your property, especially if you live within three miles of a river, stream, or ditch. Ask your local weed control office for assistance.
- Organize a volunteer removal project on public lands. Ask your local land management agency for assistance.

(This article appeared originally as a brochure put out by the City of Boulder, COLO, Open Space Department).



Above: American silverberry (*Elaeagnus commutatus*) is a native shrub that is occasionally planted as a windbreak. It is more often encountered in riparian shrub communities. Unlike *E. angustifolia*, it rarely grows taller than 6 feet and lacks spiny branches. The drupe-like fruits (a source of food for birds), flowers, leaves, and branches are covered with silvery or brownish scales. Ill. by Jeanne R. Janish (*Vascular Plants of the Pacific Northwest*).



Rare Plants of Darby and Teton Canyons (cont. from page 1)

weak saxifrage (*Saxifraga rivularis* var. *debilis*), all found in the lower valley bottoms at elevations as low as 7000 feet.

The vegetation of these canyons is characterized by a wide variety of community types. Most common is coniferous forest composed of Douglas-fir (*Pseudotsuga menziesii*), Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and to a lesser extent, lodgepole pine (*Pinus contorta*). This forest is broken up by aspen stands (*Populus tremuloides*) of varying ages. It is in these forested areas where Columbia brome (*Bromus vulgaris*) is found. This grass species is at the margin of its range in western Wyoming and is listed as "State Rare" by WYNDD. The situation is similar for Smith's onion grass (*Melica smithii*) and western twayblade (*Listera caurina*), both of which are common throughout the Pacific Northwest but occur in Wyoming only in a relatively few scattered locations within cool, moist forests of the Tetons and Yellowstone National Park.

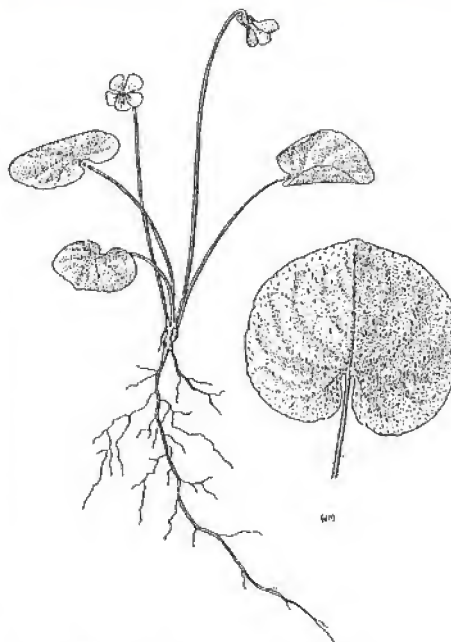
Interspersed with coniferous forests are streambeds, talus slopes, cliff faces, and rocky outcrops. It is in these rocky areas, particularly where there is flowing water, that many rare plants occur. As an example, western pearl-flower (*Heterocodon rariflorum*) was discovered on a rock face just above Teton Canyon Campground. Collected in 1956 by Loran Anderson, this tiny-flowered member of the bellflower family (*Campanulaceae*) is still not known to occur anywhere else in Wyoming.

Along the South Fork of Darby Creek is a small canyon. Moist and shady, this canyon provides a pleasant trailside retreat on a hot day. Ferns and other plants cloak the limestone cliffs and boulders. Here green spleenwort (*Asplenium trichomanes-ramosum*), mountain holly-fern (*Polystichum lonchitis*), and Steller's rock-brake (*Cryptogramma stelleri*) grow in relative profusion.

Another unique microsite is Treasure Lake, tucked away in a side canyon along Teton Creek. This is an historical location for rattlesnake-fern (*Botrychium virginianum*), a species restricted in Wyoming to the Black Hills, Tetons, and northern Absarokas. A thorough search conducted in 1995 failed to relocate this plant (as did a search by Erwin Evert in 1985), but did disclose the presence of two other species of concern not previously known to occur in the area. Buxbaum's sedge (*Carex buxbaumii*) and bristly-stalk sedge (*C. leptalea*) were both found along the south edge of the lake.

Just why *Botrychium* has not been seen here in recent years is open to speculation. The lake is located within a Boy Scout camp and obviously highly impacted by camp activity. Additionally, cattle graze freely within the canyon, and maverick bovines occasionally manage to break into and ravage camp vegetation (as they certainly did in 1995). It is not clear which force is more destructive.

Above the cool, wet canyon bottoms are frequent openings dominated by forbs and graminoids. In mid-summer these provide a dazzling display of wildflowers



Above: Kidney-leaf white violet (*Viola renifolia*) is one of several rare species of violet inhabiting the northwest corner of the state. It was collected in Teton Canyon by Loran Anderson in 1956. Ill. by Wilma Monserud (Sida 2:95).

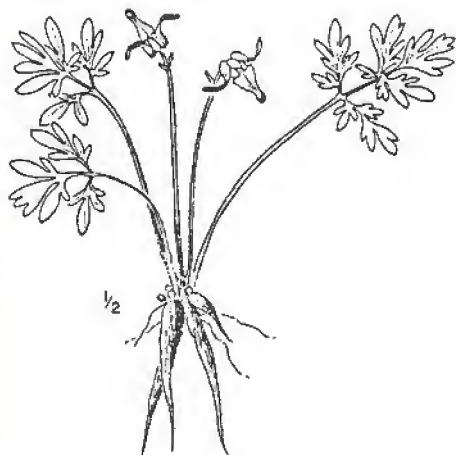
including fireweed (*Epilobium angustifolium*), sticky geraniums (*Geranium viscosissimum*), beardtongues (*Penstemon* spp.), and a wide variety of showy composites. Off to the edges of these jungles, where things are less crowded, are numerous widely scattered individuals of steer's-head (*Dicentra uniflora*) a perennial (no pun intended) favorite of wildflower enthusiasts. Until recently steer's-head was thought to be quite rare in Wyoming. Discovery of the Darby/Teton Canyon populations and others has resulted in the appropriate down-listing of the species, but has not deterred the fascination which many people express for the very oddly-shaped little flowers.

A final unusual plant to be found is western larch (*Larix occidentalis*), a major timber species of the Pacific Northwest. For years, a small stand found in Darby Canyon was thought to be a native, albeit suspiciously disjunct population, and the species was listed as a plant of special concern. A retired Forest Service employee, apparently quite amused by the confusion, came forward and admitted that these trees had, in fact, been planted some forty to fifty years before!

Because these canyons have remained largely inaccessible, the full extent of floristic diversity within them remains unknown. It is quite possible that additional rare species exist within, clinging to the rocky crags or hiding under damp streamside vegetation. Each collecting trip to the area seems to turn up new occurrence records. Plant enthusiasts at all levels would do well to further explore the diverse and unusual plant species growing in these unique mountain landscapes.



Below: Steer's-head (*Dicentra uniflora*) is one of the earliest blooming species in the mountain valleys of western Wyoming. For many years it was thought to be quite rare until intrepid early-season botanists began to detect it regularly. Ill. by Jeanne R. Janish (*Vascular Plants of the Pacific Northwest*).



Jelm Mountain's Lichens

By Bill Brenneman

The fruticose lichens *Bryoria fuscescens*, *Letharia vulpina*, and possibly *Usnea hirta* reach the southeast end of their range in Wyoming on Jelm Mountain, in the eastern foothills of the Medicine Bow Range (Albany County). They are fairly abundant there on old growth Douglas-fir on northern aspects at about 9000 feet elevation. Other species which may not grow southeast of Jelm are *Cetraria pinestra* and *Melanelia subolivaceae*.

Drs. Hayward and Rosentreter have found that northern flying squirrels use a species of *Bryoria* in their nests and for food in winter. Northern flying squirrels have not been reported from Jelm Mountain or southern Albany County. The BLM and Forest Service are working cooperatively to place nesting boxes on old Douglas-fir trees on Jelm Mountain. From subsequent studies it may be determined (1) if flying squirrels are found on Jelm; (2) if any flying squirrels there might utilize *Bryoria*; and (3) do flying squirrels only occur within the range of flourishing *Bryoria*.

Interestingly, *Bryoria* does not have good sexual reproduction. It may be dependent on flying squirrels or other animals for dispersal of asexual propagules (soralia).

Botany Briefs

Botanical News from Wyoming and the Rocky Mountain Region

Klaus Lackschewitz 1911-1995: This past summer, the Rocky Mountains lost one of its premier contemporary field botanists when Klaus Lackschewitz passed away. Klaus spent nearly 30 years botanizing the mountains of western Montana, where he discovered over 100 new plant taxa for the state and two new species for science: *Erigeron lackschewitzii* and *Lesquerella klausii*. Pink agoseris (*Agoseris lackschewitzii*) is also named in his honor.

Klaus did not begin his Rocky Mountain botanical career until the age of 50. He was born in Latvia in 1911, and received early training in botany, zoology, and ornithology. Klaus worked as a farmer until he, and other ethnic Germans, were forced into exile in Poland in 1939. Within a year, Klaus was inducted into the German army and spent World War II on the Russian front. He was captured in 1945 and then spent the next two years in a POW camp in northern Russia where his knowledge of the language helped him serve as an interpreter. When he was released, Klaus emigrated to West Germany and then to the United States, where he worked as a farmer and gardener in New York.

Klaus came to Montana in the early 1960s and worked as a landscaper and greenhouse caretaker at the University of Montana. He was a driving force in the establishment of a native flower garden on the campus. Upon retirement, he embarked on a long-term study of the flora of the Bitterroot Mountains of Montana and adjacent ranges. The result of his studies was the "Flora of West Central Montana", published by the US Forest Service in 1991. WF

Buffalograss, An Alternative to a Thirsty Lawn: Maintaining a healthy, short lawn is a costly endeavor in the arid west. Not only do lawns soak up precious moisture, their health and beauty may be dependent on costly and environmentally hazardous chemicals. As any teenager can attest, lawns also require a lot of potentially back-breaking mowing.

For those who insist on having a lawn in arid areas, researchers at the University of Nebraska at Lincoln have developed several new cultivars of native buffalograss (*Buchloe dactyloides*) that may become the turfgrass of the future. These varieties are perennial, grow slowly (thus needing less mowing), and are more drought-tolerant than exotic lawn grasses. Studies in Nebraska have found that buffalograss uses less water in a month than Kentucky bluegrass requires in one week. Buffalograss also needs less fertilizer and is more competitive with weed species (thus needing fewer herbicides) than exotic grasses.

For more information on varieties of buffalograss, contact Dr. Terry Riordan, University of Nebraska, 377 Plant Science Building, Lincoln, NE 68583-0724 (402-472-1142), or contact your local nursery or native plant seed distributor. WF

Back from the Brink: While hunting for county records in southeast Wyoming this summer, Bob Dorn discovered a population of Holzinger's Venus' looking glass (*Triodanis holzingeri*) in Goshen County, 15 miles northwest of Ft. Laramie. This small, blue-flowered member of the Campanulaceae had not been recorded in the state since Aven Nelson found it in 1894. WF

The Wyoming Native Plant Society, established in 1981, is a non-profit organization dedicated to encouraging the appreciation and conservation of the native flora and plant communities of Wyoming. The Society promotes education and research on native plants of the state through its newsletter, field trips, and annual student scholarship award. Membership is open to individuals, families, or organizations with an interest in Wyoming's flora. Members receive Castilleja, the Society's quarterly publication, and may take part in all of the Society's programs and projects, including the annual meeting/field trip held each summer. Dues are \$5.00 annually.

To join the Wyoming Native Plant Society, return the membership form below to:

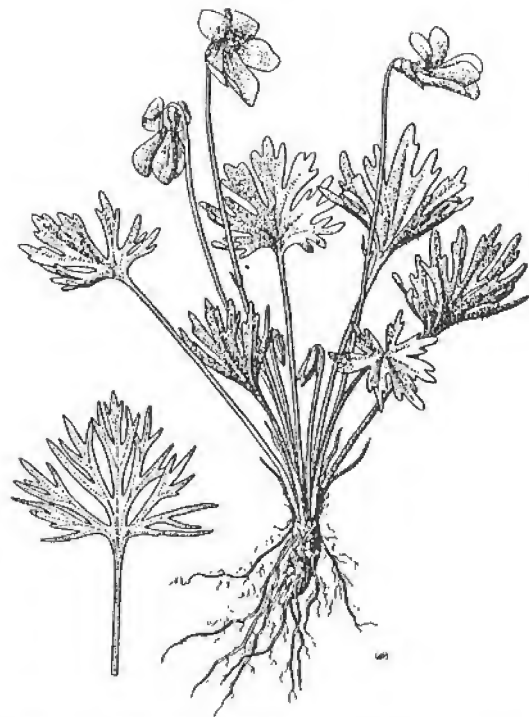
Wyoming Native Plant Society
1604 Grand Ave.
Laramie, WY 82070

Name _____

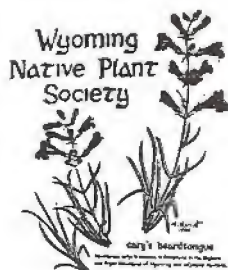
Address: _____

___ \$5.00 Regular membership

___ \$15.00 Scholarship Supporting Member
(\$10.00 goes to the annual scholarship fund)



Above: Prairie violet (*Viola pedatifida*), an unusual violet with palmately divided leaves that is restricted to the Black Hills in Wyoming. Ill. by Wilma Monserud (Sida 2: 51).



WYOMING NATIVE
PLANT SOCIETY
1604 Grand Avenue
Laramie, WY 82070